



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

H<sup>1</sup>D

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,526	12/29/2003	Andrew Berlin	070702007300	8526

7590 09/28/2006  
Raj S. Dave  
Morrison & Foerster LLP  
Suite 300  
1650 Tysons Blvd.  
McLean, VA 22102

EXAMINER
----------

LARKIN, DANIEL SEAN

ART UNIT	PAPER NUMBER
----------	--------------

2856

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/748,526

Applicant(s)

BERLIN ET AL.

Examiner

Daniel S. Larkin

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 12-15, 20-24 and 30-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33-37 is/are allowed.
- 6) ☒ Claim(s) 1-4, 12-15, 20-24, and 30-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 20-24 and 30-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 20, claim line 1: The preamble makes reference to a method of "identifying characteristics or properties of molecules"; however, the body of the claim fails to provide a connection between scanning the nanocodes and identifying characteristics or properties of the molecules. Scanning a structure does not necessarily lead to identification. If applicant wishes to provide an identification type preamble, then applicant is required to add this limitation to the claim in order to receive consideration of the preamble; otherwise this insertion within the preamble should be deleted. It is unclear if applicant want patentable weight to be given to the phrase "identifying characteristics or properties of molecules" since the body of the claim fails to link the method of scanning with the concept of identifying.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

Art Unit: 2856

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0033863 (Ashby et al.) in view of US 5,047,633 (Finlan et al.).

With respect to the limitations of claim 1, Ashby et al. disclose an atomic force microscope for use in screening potential interactions between biological molecules comprised of an array of scanning probe tips, as shown in Figure 8; and an analyzer coupled to the scanning array. As to the limitation of providing an array that is "capable of scanning nanocodes", the examiner argues that given that the device of Ashby et al. is an atomic force microscope used to measure on the atomic level, the array of Ashby et al. would inherently have the capability of measuring nanocodes, as it does with measuring small molecules and proteins, among the many other uses available to an atomic force microscope. As to the limitation of "utilizing scanned information to identify molecules", the examiner argues that the microscope of Ashby et al. would have the inherent capability to provide identification; however, the examiner acknowledges that the disclosure fails to expressly disclose that the microscope is used for identification purposes.

Finlan et al. disclose an imaging apparatus and a method of using the apparatus wherein the background of the invention discloses that the invention enables routine sequencing to be carried out by direct analysis of the molecules under test. Additionally, the disclosure recites that the invention achieves sufficient resolution to enable individual bases to be structurally distinguished from one another, col. 1, lines 50-56. Given that the bases can be distinguished from one another, the examiner

Art Unit: 2856

argues that if one knows what one is looking for, then the bases/molecules can also be identified. Providing means for identifying the material being scanned would have been obvious to one of ordinary skill in the art as a means of advancing ones' understanding of the molecules under test.

With respect to the limitation of claim 2, Ashby et al. would again have the inherent capability of measuring friction characteristics.

With respect to the limitations of claim 3, Ashby et al. disclose an atomic force microscope comprised of an array of two or more scanning probe tips, as shown in Figure 8.

With respect to the limitation of claim 4, Ashby et al. fail to expressly recite that the scanning array is a three by three array. Finlan et al. disclose an apparatus for imaging macromolecules and interactions involving macromolecules, whereby an array of probes (13) is utilized to perform the imaging. One example, as shown in Figure 4, shows a four by four array of scanning probes. It is the examiner's position that one of ordinary skill in the art would have the requisite ability to create a scanning array as large or as small as the operator wishes in order to take advantage of the number of sample needed to be scanned, as well as to more quickly scan a plurality of samples.

With respect to the limitation of claim 12, Ashby et al. would again have the inherent capability of measuring DNA molecules.

With respect to the limitation of claim 13, Ashby et al. appear to disclose means for holding a sample (20).

With respect to the limitation of claim 14, since Ashby et al. would have the

inherent capability of scanning nanocodes, the array would also have the inherent capability of measuring molecular assay labels.

With respect to the limitations of claim 15, Ashby et al. disclose an atomic force microscope for use in screening potential interactions between biological molecules comprising: means to support a substrate (20); an array of scanning probe tips, as shown in Figure 8; and an analyzer coupled to the scanning array. As to the limitation of providing an array that is "capable of scanning nanocodes", the examiner argues that given the device of Ashby et al. is an atomic force microscope that is used to measure on the atomic level, the array of Ashby et al. would inherently have the capability of measuring nanocodes, as it does with measuring small molecules and proteins, among the many other uses available to an atomic force microscope. As to the limitation of "utilizing scanned information to identify molecules", the examiner argues that the microscope of Ashby et al. would have the inherent capability to provide identification; however, the examiner acknowledges that the disclosure fails to expressly disclose that the microscope is used for identification purposes.

Finlan et al. disclose an imaging apparatus and a method of using the apparatus wherein the background of the invention discloses that the invention enables routine sequencing to be carried out by direct analysis of the molecules under test. Additionally, the disclosure recites that the invention achieves sufficient resolution to enable individual bases to be structurally distinguished from one another, col. 1, lines 50-56. Given that the bases can be distinguished from one another, the examiner argues that if one knows what one is looking for, then the bases/molecules can also be

Art Unit: 2856

identified. Providing means for identifying the material being scanned would have been obvious to one of ordinary skill in the art as a means of advancing ones' understanding of the molecules under test.

***Allowable Subject Matter***

4. Claims 20-24 and 30-32 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
5. Claims 33-37 are allowable.

***Response to Arguments***

6. Applicant's arguments with respect to claims 1-4 and 12-15 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

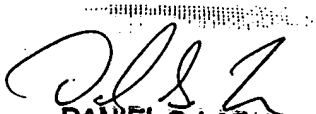
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Larkin whose telephone number is 571-272-2198. The examiner can normally be reached on 8:00 AM - 5:00 PM Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 571-272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Larkin  
AU 2856  
22 September 2006



DANIEL S. LARKIN  
PRIMARY EXAMINER